

Notice of Allowability

Application No.

10/064,215

Examiner

Naheed Ejaz

Applicant(s)

LIN ET AL.

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 06/21/2002 & 11/15/2005.
2. ☒ The allowed claim(s) is/are 1-4.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 04/26/2004
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

TESFALDET BOZURE
PRIMARY EXAMINER

DETAILED ACTION

1. The following is an examiner's statement of reasons for allowance: the claimed subject matter of claims 1 and 4 are allowable because the arts of record fail to teach or fairly suggest the claim 1 clock recovery circuit for generating an output signal that is synchronized with an input signal, the clock recovery circuit comprising:

a charge pump for generating a charging current according to a phase difference between the input signal and the output signal; a first filter electrically connected to the charge pump for generating an output voltage corresponding to the charging current; a second filter for adjusting the output voltage of the first filter; a switch circuit electrically connected in series between the first filter and the second filter for controlling the electrical connection between the first filter and the second filter; and an oscillator for adjusting a phase or frequency of the output signal according to a voltage; wherein when the charge pump is operating, the switch circuit disconnects the first filter from the oscillator, and when the charge pump stops operating, the switch circuit connects the first filter and the oscillator such that the oscillator adjusts the frequency or phase of the output signal according to the output voltage of the first filter.

Therefore, claim 1 is allowable.

2. Claims 2 and 3 are allowable as being dependent from an allowable independent claim, claim1.

3. Claim 4 is allowable because of the following reason:

A clock recovery method for generating an output signal that is synchronized with an input signal; the method comprising: generating a charging current according to a phase difference between the input signal and the output signal; generating an output voltage according to the charging current with first filter; adjusting the output voltage of the first filter with a second filter; connecting switch in series between the first filter and the second filter; and closing the switch for adjusting a frequency or phase of the output signal only after a waveform of the output voltage has been stable.

Therefore, claim 4 is allowable.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
- Yahagi et al. (5,389,899) disclose the frequency synthesizer includes a circuit for switching the output of the voltage controlled oscillator by quickly charging or discharging a capacitor of the loop filter (figure 3).
 - Gilbert et al. (5,847,614) disclose a charge pump in a phase lock loop and the disabling the current switch and reducing the power consumption of the charge pump (figure 2 and Abstract).

- Crowley et al. (6,057,739) teach phase-locked loop with variable parameters.

Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Naheed Ejaz whose telephone number is 571-272-5947. The examiner can normally be reached on Monday - Friday 8:00 - 4:30.
7. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Naheed Ejaz
Examiner
Art Unit 2631

N.E.
12/20/2005

TESFALDET BOGURE
PRIMARY EXAMINER